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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/647,489	09/29/2000	Hidetoshi Saito	216-415P	8093

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EXAMINER

SAVAGE, JASON L

ART UNIT	PAPER NUMBER
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1775

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DATE MAILED: 02/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/647,489

Applicant(s)

SAITO ET AL.

Examiner

Jason L. Savage

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE \_\_\_\_\_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on 20 November 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☒ Claim(s) 9-13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 November 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

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***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Hijikihigawa et al (US 5,140,393).

Hijikihigawa teaches a sensor device which has a surface shaped to exhibit improved performance (col. 1, ln. 11-24). Hijikihigawa further teaches that by increasing the surface area of the sensor, it will exhibit enhanced detection sensitivity (col. 5, ln. 56-60). The increased surface area is provided by forming metal oxide projections such as tin oxide in various shapes such as trapezoidal, pyramidal, conical or semispherical (col. 4, ln. 53 - col. 5, ln. 14) and the projections are shown to be substantially oriented in a parallel direction (Figure 1(a)).

Hijikihigawa also teaches that the projections can be suitably sized so as to have a specified shape and dimensions (col. 5, ln. 46-55).

Hijikihigawa is silent to the diameter and density of the projections; however it does teach that the distance d as shown in Figure 1(a) can be from 0.1 to several micrometers (col. 5, ln. 25-28). This is taken as a teaching that the projections have dimensions on the same scale and

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thus would meet the limitation of having diameters less than 10,000  $\mu\text{m}$  and a whisker density within the claimed range.

Regarding the claimed aspect ratio of 0.1, the projections in Figure 1(a) appear to be just as high as they are wide and thus would meet the claim limitation.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-5, 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hijikihigawa et al (US 5,140,393).

Regarding the limitation that the aspect ratio be 0.1 or more, Hijikihigawa teaches that it is advantageous to maximize the surface area of the sensor (col. 5, ln. 56-60). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have formed the oxide whiskers of Hijikihigawa with as large of an aspect ratio as possible in order to maximize the surface area of the sensor.

Regarding claim 2, it is the position of the Examiner that the substrate material to which the whiskers of Hijikihigawa are bonded is a substance which secures the whiskers together.

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Hijikihigawa teaches that the substrate may be an inorganic substance such as glass or ceramic (col. 4, ln. 53-59).

Regarding claims 3-5 and 7-8, although Hijikihigawa is silent to formed structure being used as an emission element, capacitor element, memory element, laser emission element and optical switch, these recitations are at best statements of intended use. Statements of intended use are not considered patentable distinguishing limitations. See Ex parte Masham 2 U.S.P.Q. 2D 1647, 1648. In re Tahuau 135 F.2d 344, 47 U.S.P.Q. 324. Application of Hack, 245 F.2d 246, 114 U.S.P.Q. 161. Therefore, the intended use statements recited in claims 3-5 and 7-8 do not patentably distinguish the present invention from the prior art.

### ***Response to Arguments***

5. Applicant's arguments filed 11-20-02 have been fully considered but they are not persuasive.

Applicant argues on pages 19-33 of the Amendment filed 11-20-02 that Hijikihigawa (aka Hijikagawa) does not provide any data showing that the sensor device has any of the structural characteristics described in Hijikihigawa and that the figures depicting said characteristics are merely diagrams showing an example of an idea of a design suitable for a sensor device. This argument is not persuasive since the reference must be considered as a whole and it is not limited to only the information which is supported by Experimental data just as

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Applicant is not limited to claiming only the specifics data points which are taught in the examples. The reference clearly teaches that structures such as those claimed by Applicant are desirable and sets forth a method of producing said structures. Should Applicant believe that the claimed structures could not be formed by the method taught by Hijikihigawa, he should submit proof. The mere assertion that since Hijikihigawa fails to provide experimental data and photomicrographs of the formed structures, it would not meet the claimed functional element structure is not considered proof.

*Allowable Subject Matter*

6. Claims 9-13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

*Conclusion*

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO**

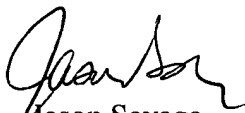
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MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

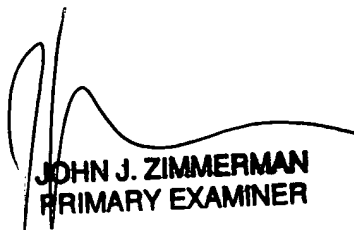
8. Any inquiry to this communication or earlier communications from the Examiner should be directed to Jason Savage, whose telephone number is (703)305-0549. The Examiner can normally be reached Monday to Friday from 6:30 AM to 4:00 PM.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Deborah Jones, can be reached on (703)308-3822.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703)308-2351.

  
Jason Savage

2-7-03

  
**JOHN J. ZIMMERMAN**  
**PRIMARY EXAMINER**